

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. – 94. (Cancelled)

95. (Currently Amended) A graphical user interface for generating a visual display to facilitate design and modeling of a physical structure, comprising:

a display screen;

a processor to generate an output on the display screen; and

a user actuable controller to select outputs on the display screen in a design process,

wherein the processor generates a display of a parent profile representing an outline for design, the outline delineating a shape of ~~the~~ the physical structure, the parent profile including segments, each of the segments having at least one dimensional characteristic, an icon for selecting at least one segment of the segments, and an icon for evolving the parent profile, and

wherein, in response to the user selecting the at least one segment by selecting the icon for selecting with the user actuable controller, the processor modifies the at least one dimensional characteristic of the at least one segment to produce a modified segment, and causes the display to display the modified segment, and

wherein, in response to the user selecting the icon for evolving the parent profile with the user actuable controller, the processor performs evolving of the parent profile using a genetic algorithm to produce an offspring profile, the evolving including evolving the modified segment,

the offspring profile representing a new outline for the design, the new outline delineating a new shape of the physical structure, and causes the display to display the new outline for the design.

96. (Currently Amended) A graphical user interface as claimed in claim 95, wherein the segments of the profiles represent curves and lines of contours of externally visible components of the physical structure.

97. (Previously Presented) A graphical user interface as claimed in claim 95, wherein at least one of the profiles includes at least one dimensional characteristic pertaining to the overall profile.

98. (Previously Presented) A graphical user interface as claimed in claim 95, wherein at least one of the profiles includes different levels of detail.

99. (Currently Amended) A graphical user interface as claimed in claim 95, wherein at least one of the profiles includes a grouping of the segments that represents a component of the physical structure.

100. (Currently Amended) A graphical user interface as claimed in claim 95, wherein at least one of the profiles includes a grouping of the segments that represents a component of the

physical structure, the grouping including at least one dimensional characteristic pertaining to the grouping.

101. (Currently Amended) A graphical user interface as claimed in claim 95, wherein at least one of the profiles includes at least two groupings of the segments that respectively represent at least two components of the physical structure, the profile including a relational parameter pertaining to a relationship between the at least two groupings.

102. (Previously Presented) A graphical user interface as claimed in claim 95, wherein at least one of the profiles includes a relationship between at least two of the segments, the relationship including a radius parameter.

103. (Previously Presented) A graphical user interface as claimed in claim 95, wherein the profiles are of an automobile.

104. (Previously Presented) A graphical user interface as claimed in claim 95, wherein the display displays the offspring profile.

105. (Previously Presented) A graphical user interface as claimed in claim 95, wherein the display simultaneously displays the parent and offspring profiles.

106 (Previously Presented) A graphical user interface as claimed in claim 98, wherein the display displays at least one of the profiles at one of the different levels of detail.

107. (Previously Presented) A graphical user interface as claimed in claim 99, wherein the display displays the grouping.

108. (Previously Presented) A graphical user interface as claimed in claim 99, wherein the display includes a first window displaying at least one of the profiles and a second window displaying the grouping.

109. (Previously Presented) A graphical user interface as claimed in claim 95, wherein the display displays a family tree identifying successive generations of the parent and offspring profiles.

110. (Previously Presented) A graphical user interface as claimed in claim 95, wherein the display simultaneously displays the parent profile, the offspring profile, and a family tree identifying successive generations of the parent and offspring profiles.

111. (Previously Presented) A graphical user interface as claimed in claim 95, wherein the display is a three-dimensional display displaying at least one of the profiles as a three-dimensional image.

112. (Previously Presented) A graphical user interface as claimed in claim 95, further comprising a profile editor to specify or modify the at least one dimensional characteristic for at least one of the segments.

113. (Previously Presented) A graphical user interface as claimed in claim 97, further comprising a profile editor to specify or modify the at least one dimensional characteristic pertaining to the overall profile.

114. (Currently Amended) A graphical user interface as claimed in claim 95, further comprising a profile editor to modify at least one of the profiles to identify a grouping of the segments that represents a component of the physical structure.

115. (Currently Amended) A graphical user interface as claimed in claim 95, further comprising:

a profile editor to modify at least one of the profiles to identify a grouping of the segments that represents a component of the physical structure, and to specify or modify at least one dimensional characteristic pertaining to the grouping.

116. (Currently Amended) A graphical user interface as claimed in claim 95, further comprising:

a profile editor to modify at least one of the profiles to identify at least two groupings of the segments that respectively represent at least two components of the physical structure, and to specify or modify a relational parameter pertaining to a relationship between the at least two groupings.

117. (Previously Presented) A graphical user interface as claimed in claim 102, further comprising a profile editor to specify or modify the relationship between the at least two segments.

118. (Previously Presented) A graphical user interface as claimed in claim 95, further comprising a profile editor to isolate at least one of the segments of the parent profile from evolving.

119. (Previously Presented) A graphical user interface as claimed in claim 97, further comprising a profile editor to isolate the at least one dimensional characteristic pertaining to the overall profile from evolving.

120. (Previously Presented) A graphical user interface as claimed in claim 99,
wherein the grouping is part of the parent profile, and
further comprising a profile editor to isolate the grouping from evolving.

121. (Previously Presented) A graphical user interface as claimed in claim 95, further comprising a profile editor to select at least one of the segments specifically for evolving.

122. (Currently Amended) A graphical user interface as claimed in claim 95,
wherein the parent profile includes at least two groupings of the segments that respectively represent at least two components of the physical structure, and
further comprising a profile editor to select one of the two groupings specifically for evolving.

123. (Previously Presented) A graphical user interface as claimed in claim 100,
wherein the grouping is part of the parent profile, and
wherein the genetic algorithm evolves the at least one dimensional characteristic pertaining to the grouping.

124. (Previously Presented) A graphical user interface as claimed in claim 101,
wherein the at least two groupings are part of the parent profile, and
wherein the genetic algorithm evolves the relational parameter pertaining to the relationship between the at least two groupings.

125. (Previously Presented) A graphical user interface as claimed in claim 102,
wherein the relationship between the at least two segments is part of the parent profile,
and
wherein the genetic algorithm evolves the relationship between the at least two of the
segments.

126. (Previously Presented) A graphical user interface as claimed in claim 95, further
comprising a profile editor to specify a user preference to keep at least one of the segments
unchanged during the evolving.

127. (Previously Presented) A graphical user interface as claimed in claim 99, further
comprising a profile editor to specify a user preference to keep the grouping unchanged during
the evolving.

128. – 129. (Cancelled)

130. (Currently Amended) In a computer system having a user interface including a
display and a selection device, a method of designing a physical structure with the display and
selection device, comprising:

displaying on the display a parent profile representing an outline of ~~[[a]]~~ the physical structure, the outline delineating a shape of the physical structure, the profile including plural segments, each of the segments having at least one dimensional characteristic;

receiving a selection signal from the selection device, the selection signal indicating selection of at least one segment of the plural segments;

modifying the at least one dimensional characteristic of the selected at least one segment in response to the selection signal;

displaying on the display the modified selected at least one segment;

receiving a selection signal from the selection device, the selection signal indicating selection of an icon for evolving the parent profile using a genetic algorithm to produce an offspring profile, the evolving including evolving the modified at least one dimensional characteristic of the selected at least one segment, the offspring profile representing a new shape of the physical structure; and

displaying on the display the offspring profile representing the new shape of the physical structure.